

INTERSTATE COMMERCE COMMISSION

REPORT OF THE DIRECTOR OF THE BUREAU OF SAFETY IN RE
INVESTIGATION OF AN ACCIDENT WHICH OCCURRED ON
THE TOLEDO, PEORIA & WESTERN RAILWAY NEAR SMITH-
FIELD, ILL., ON JANUARY 25, 1927.

March 15, 1927.

To the Commission

On January 25, 1927, there was a derailment of a mixed train on the Toledo, Peoria & Western Railway near Smithfield, Ill., resulting in the death of one employee and the injury of two employees. This accident was investigated in conjunction with a representative of the Illinois Commerce Commission.

Location and method of operation

This accident occurred on the Western Division, extending between Peoria, Ill., and Keokuk, Iowa, a distance of 112.8 miles, in the vicinity of the point of accident this is a single-track line over which trains are operated by time-table, train orders and a manual block-signal system. Seville is located 3.3 miles west of Smithfield and the accident occurred between these two points, on a fill about 20 feet in height, approaching this point from the east there is a 30° 04' curve to the left 1,125 feet in length, followed by 1,621.7 feet of tangent, the accident occurring on this tangent at a point about 650 feet from its eastern end. The grade is practically level at the point of accident.

The track is laid with 80-pound rails, 33 feet in length, with about 19 ties to the rail-length, and is ballasted with cinders to a depth of about 10 inches. The rail was rolled and laid in 1909.

The weather was clear and cold at the time of the accident, which occurred at about 11 35 a.m.

Description

Westbound mixed train No. 3 consisted of 13 freight cars, 1 combination baggage, mail and express car, and 1 coach, in the order named, hauled by engine 13, and was in charge of Conductor Lynch and Engineman Weldron. This train left Peoria at 7.45 a.m., on time, and at Canton, 28.4 miles beyond, an order was received

to run one hour late from Cuba to Hamilton, located 5 3 miles east and 68.1 miles west, respectively, of Smithfield. Train No. 7 left Smithfield, the last station, at 11 27 a.m., one hour and two minutes late, and was derailed while traveling at a speed variously estimated to have been between 20 and 40 miles an hour.

The entire train was derailed to the left with the exception of the coach and the rear truck of the combination car. The engine came to rest on its right side at the bottom of the fill, with its head end about 470 feet west of the initial point of derailment, while the majority of the derailed freight cars were scattered about at various angles across the track and down the fill. The employee killed was the engineman.

Summary of evidence

Fireman Newkirk stated that the train was drifting as it approached the point of accident and that the first intimation he had of anything wrong was when the engine swayed to one side, whereupon the engineman made a light air-brake application. The engine then dropped to the ties and the engineman at once applied the air brakes in emergency, following which the general derailment occurred. He estimated the speed to have been not over 25 miles an hour immediately prior to the derailment. Fireman Newkirk further stated that he had been looking straight ahead but had noticed nothing out of the ordinary, such as spread or broken rails or any obstruction, that he had not noticed anything wrong with the engine and that the air brakes had worked properly en route. The statements of Head Brakeman Ball practically corroborated those of Fireman Newkirk. Head Brakeman Ball also stated that at the time the engine lurched to one side it felt as though a low spot in the track had been encountered; he leaned out, looked ahead and saw that the forward end of the engine was on the ties.

Baggageman Smilie, who was riding in the combination car, said the first he knew of anything wrong was when the air brakes were applied in emergency, at which time the speed was about 20 miles an hour. On examining the track under the combination car after the derailment he noticed that the south rail was spread and that the north rail was intact, the forward truck of the combination car was off the track, with the wheels between the two rails.

Conductor Lynch, who was riding in the coach, stated that the speed of his train was about 30 miles an hour when he felt the air brakes apply in emergency, after the accident he made no examination of the track under the last two cars. Conductor Lynch further stated that

there was no occasion for Engineman Waldron to operate the train at an excessive rate of speed on this occasion as it was not due out of Seville under the run-late order until 11 40 a.m., Seville being only a short distance west of the point of accident. The statements of Flagman Rhoads, who was also riding in the rear car, were similar to those of Conductor Lynch.

Roadmaster Sharpe stated that during the past summer all old ties in the vicinity of the point of accident had been replaced with new ties, the track being out in good condition, and he thought it was safe for a speed of 50 miles an hour. In the forenoon of the day prior to the accident he rode over on train No. 4 the section of track where the accident occurred and inspected the track from the rear end of the train, but noticed nothing wrong. At the time of the accident he was riding on the rear end of train No. 3 watching the track and he estimated the speed of the train to have been about 35 or 40 miles an hour immediately prior to the derailment, the first he knew of anything wrong was when the air brakes were applied in emergency. After the accident he examined the track and found that the rails on the south side of the track had been torn out, none of them ~~was~~ broken but several were bent. He also found that many bolts had been sheared off, and that under the combination car the south rail had spread, as he expressed it, "not much, not enough to hurt anything . . . not over an inch." The track structure was not badly damaged, however, and it was necessary only to lay new rails on the original ties, which seemed to be in condition to hold the spikes properly. The ground was frozen, while the roadbed was covered with snow and ice, and Roadmaster Sharpe said the marks where the train was first derailed were very slight. He did not know which part of the train was the first to have been derailed, although he did not think it was the engine, and he was unable to give any explanation as to the cause of the derailment.

Road Foreman of Engines Ward stated that he rode on engine 13 from Peoria to Canton on the trip on which this accident occurred, everything about the engine appeared to be working properly and he noticed nothing wrong with the rest of the train. He arrived at the scene of the accident about four hours after its occurrence and his examination of the engine at that time disclosed that the reverse lever was in the back-up position while the brake-valve handles, both straight and automatic, were in lap position. The brake beams appeared intact, and there was nothing wrong with the wheel flanges on the left side of the engine, on account of the position of the engine he could not examine the wheels on the right side.

Superintendent Eckard stated that on January 28, an unsuccessful attempt was made to pull engine 13 up the side of the fill, using two wrecking cranes, but the engine could only be moved about 4 feet. He then made such examination of the engine as was possible under the circumstances but found nothing wrong with the brake shoes, brake beams, flanges, etc. Superintendent Eckard also said that he had found nothing wrong with the track and expressed the opinion that at the time the enginemen made the air-brake application the brakes applied in emergency, causing the buckling of the empty cars near the head end of the train.

Section Foreman Miller said he inspected the track in this vicinity at about 7 15 or 7 20 a.m. on the day of the accident, going over it on his motor car, while two eastbound trains passed over it between 9 a.m. and 9.30 a.m. At the time of his inspection the track appeared to be in good condition, although on account of the snow on the ground about all of the track that he could see was the rails. The snow had been on the ground for about three weeks prior to the accident and during this interval he had not been able to see all of the track structure. Section Foreman Miller arrived at the scene of the accident within less than an hour after its occurrence, and found that the south rail had been torn out for a considerable distance and that it was spread where the derailed truck of the baggage car stood between the rails, the north rail had not been spread. When the track was repaired, spikes were driven into the same ties that were in the track when the derailment occurred and these ties held the spikes firmly. Subsequently, however, ties splintered as a result of the derailment were removed. He did not think that track conditions had anything to do with the accident.

Examination of the track by the Commission's inspectors, after temporary repairs had been made, indicated that one of the rails on the south side of the track had spread and then had been pushed outward and over, allowing the wheels to drop between the rails, where they ran for a short distance before leaving the roadbed. The actual point of derailment appeared to have been at or a short distance west of a joint in the left rail. Approaching this point from the east it was found that the second rail from the joint, on the south side of the track, had spread throughout its entire length. The maximum distance this rail had spread was approximately 2 inches, at the center of the rail. The succeeding rails on the north side of the track had then been spread, also to a maximum distance of 2 inches, this being followed by the spreading and overturning of the south rail where the derailment occurred. East of the point where these rails had spread

it was found that the gauge was open and that it varied from 4 feet $8\frac{3}{4}$ inches to 4 feet $9\frac{1}{4}$ inches. On making a more detailed examination of the ties on the sixth day after the occurrence of the accident, at which time the track was free of snow and ice, it was found that there were two successive ties in the track at the approximate point of derailment which were so decayed and broken that they would not hold the spikes, and that from four to six ties per rail-length were in such condition as to require renewal, while a large number of spikes were found to have been working loose in the ties, the heads of many of the spikes were 2 inches above the bases of the rails.

Conclusions

This accident is believed to have been due to bad track conditions.

At the time of this investigation a complete examination of engine 13 could not be made, but such examination as was possible under the circumstances failed to develop the presence of anything which could have contributed to the occurrence of this accident. On the other hand, however, the examination of the track showed that there were many unsound ties and that a great many spikes had been working loose in the ties. With the track in this weakened condition the nosing of the engine probably caused first the left rail to spread, and then the right rail, following by the spreading and turning over of the left rail.

The employees involved were experienced men; at the time of the accident they had been on duty about 4½ hours after about 19 hours off duty.

Respectfully submitted,

W. P. Borland

Director.